

NON-PUBLIC?: N
ACCESSION #: 8803010068
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Indian Point Unit No. 2 PAGE: 1 of 3

DOCKET NUMBER: 05000247

TITLE: Reactor Trip on Intermediate Range High Flux
EVENT DATE: 01/25/88 LER #: 88-002-00 REPORT DATE: 02/24/88

POWER LEVEL: 015

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR
SECTION
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
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SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT: On January 25, 1988 during plant start-up operations, a reactor trip occurred when the intermediate range high flux trip setpoint was exceeded shortly after synchronizing the turbine-generator to the power grid. A high rate of increase in turbine power (steam demand) after synchronization induced a reactor coolant system cooldown and pressure decrease. The operator responded by manually withdrawing control rods to raise reactor power and thereby increase reactor coolant temperature and pressure. The reactor tripped at approximately 15% power via one of two intermediate range nuclear power channels (N 36). Post trip testing revealed that channel N 36 trip setpoint was conservatively set at 15% power (nominally 25%). All systems operated as per design. The intermediate range high flux trip setpoint for channel N 36 was subsequently readjusted closer to but less than 25% reactor power. The operating personnel were readvised concerning the rate of steam demand increase during plant start-ups. The health and safety of the public were not affected.

(End of Abstract)

TEXT: PAGE: 2 of 3

PLANT AND SYSTEM IDENTIFICATION:

Westinghouse Four Loop Pressurized Water Reactor.

IDENTIFICATION OF OCCURRENCE:

Reactor Trip on Intermediate Range High Flux Signal.

EVENT DATE:

January 25, 1988

REPORTABILITY DETERMINATION DATE:

January 25, 1988

REPORT DUE DATE:

February 24, 1988

REFERENCES:

Significant Occurrence Report (SOR) 88-53, 88-53A, 88-53B.

PAST SIMILAR OCCURRENCES:

On September 28, 1985 Indian Point Unit 2 tripped at 25% power during a start-up. The trip process was not curtailed via use of permissive 10 to block the 25% Power Range High Flux-Low Level Trip.

DESCRIPTION OF OCCURRENCE:

On January 25, 1988, Indian Point Unit 2 was undergoing post refueling outage testing. The main turbine-generator had been removed from service at approximately 0110 hours for the purpose of performing main turbine overspeed tests. These tests were completed at approximately 0400 hours when unit start-up operations commenced. The main generator was synchronized to the power grid at approximately 0519 hours. The operator immediately increased load on the turbine-generator to 40 MWe. This was reported to be accomplished by two separate governor raise actuations. The resultant increase in steam demand was evidenced by a temperature and pressure decrease in the reactor coolant system. Another operator controlling reactor coolant temperature responded by manually withdrawing control rods to compensate for the higher steam demand and subsequent reactor coolant system cooldown. The rate of reactor power increase was later calculated from computer records to be between 0.4 and 1.0 decades per minute.

TEXT: PAGE: 3 of 3

DESCRIPTION OF OCCURRENCE (con't):

The reactor trip occurred at approximately 15% power from one of two intermediate range nuclear power channels (N-36). The actual trip time as recorded by the station computer was 0520:29:6 hours.

ANALYSIS OF OCCURRENCE:

Reactor protection system actuation is a reportable occurrence. During this event all safety related equipment operated as designed.

The permissive to block the low power range nuclear trips (P-10) is obtained when reactor power exceeds 10% on two out of four power range channels. This permissive is indicated via a status light in the control room. There is no audible feature associated with this permissive. Personnel on shift reported that this status light was not observed prior to reactor trip. However, computer records indicate that the requirements for the permissive were obtained at 0520:04 hours, approximately 26 seconds prior to the reactor trip.

Generally, the High Flux trip setpoint for intermediate Range Nuclear Power Channel N 36 is set at a value close to but less than 25% reactor power. Post trip testing revealed that the actual trip setpoint for channel N36 was conservatively set at approximately 15% power.

CAUSE OF OCCURRENCE:

The cause of the event was a rapid load increase placed on the main turbine-generator unit following synchronization and the reactor operator's overcompensation with control rod withdrawal. The resultant reactor power increase, coupled with the conservative high flux trip setting for intermediate range power channel N36, resulted in the rapid development of a trip condition.

CORRECTIVE ACTION:

The setpoint for intermediate range nuclear power channel N36 was readjusted to a value close to but less than 25% reactor power.

Operating crews were readvised by operations management to maintain a gradual power increase during plant start-ups and, in particular, during main generator synchronizations. The operations personnel on shift during the event were subject to observation by operations management during the successful subsequent unit start-up and synchronization.

ATTACHMENT # 1 TO ANO # 8803010068 PAGE: 1 of 1

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Vice President

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February 23, 1988

Re: Indian Point Unit No. 2
Docket No. 50-247
LER 88-002-00

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

The attached Licensee Event Report LER 88-002-00 is hereby submitted in accordance with the requirements of 10 CFR 50.73.

Very truly yours,
/s/ Stephen B. Bram

attachment

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